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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,795	04/10/2006	Gustave Paul Corten	72998-013700/US	8905

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EXAMINER	
WIEHE, NATHANIEL EDWARD	
ART UNIT	PAPER NUMBER
3745	

MAIL DATE	DELIVERY MODE
05/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,795	CORTEN ET AL.	
	Examiner	Art Unit	
	Nathan Wiehe	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,3-7,9,10,13-15,17-21,23,24,26 and 29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,3-7,10,15,17,19-21,23,24,26 and 29 is/are rejected.

7)☒ Claim(s) 9,13,14 and 18 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 14 December 2005 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 12142005; 03062006.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 14 December 2005 and 6 March 2006 are noted. However, The information disclosure statement filed 14 December fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
The specification to which the oath or declaration is directed has not been adequately identified. See MPEP § 602.

The oath should only identify the applicant as a nation stage of PCT/BL2004/00421 without identifying the U.S. application number.

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Specifically, the statement "37 CFR 1.56(a)" is insufficient

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the water turbines (Claim 18) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 13 and 14 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple

dependent claim. See MPEP § 608.01(n). Accordingly, the claims 13 and 14 not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4,5,6 and 10/9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "of claim 1 or claim 2" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "lowering of the axial induction (a) is effected by reducing the chord of the blades". However, claim 1, from which claim 5 depends, establishes that the axial induction is reduced by turning the blade angles. Therefore, the meets and bounds of the claim are unclear.

Claim 6 is unclear due to its dependence from claim 5.

Claim 10/9 recites the limitation "as a function of the distance to at least one second turbine located in the lee". However, claim 9, from which claim 10/9 depends, establishes that the induction is determined on the basis of a measure for the turbulence at the second turbine. Therefore, the meets and bounds of the claim are unclear.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 20 and 21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 20 and 21 are directed to design and control software, respectfully. However, the software is not embodied in some type of computer readable medium. Also, the claims do not produce a concrete, tangible result since the limitations only require the software to be able to calculate. Further, In regard to claim 20, it is unclear how software is capable of adding guiding elements.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,3,7,15,17,19,23,24,26,29 and 4, as far as it is definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinbuch et al. (1988). Optimal Control of Wind Power Plants, *Journal of Wind Engineering and Industrial Aerodynamic. (27),* hereinafter "Steinbuch", in view of Kos et al. (4;193,005), hereinafter "Kos". Applicant notes (page 4, lines 1-6) that Steinbuch teaches operation of a wind turbine farm including the reduction of the windward turbines blade tip speed, thus reducing axial induction, can increase the overall farm production. Steinbuch does not disclose the means for reducing the blade tip speed. However, in the art of wind turbines it is

well known to control the rotor speed, and thereby the blade tip speed, through the turning the blades for the purpose of optimizing the output of the turbine and preventing overrun conditions.. Specifically, Kos describes a turbine including a blade pitch control system, responsive to a wind velocity sensor. Kos's control system constitutes software, in that it is programmed, and determines an appropriate blade angle and speed of revolution in response to a wind speed parameter. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the turbines of Steinbuch by utilizing a blade pitch control system capable of feathering the blades to reduce blade tip speed as taught by Kos for the purpose of optimizing the output of the turbines and preventing an overrun condition.

In regard to claims 3 and 15, Applicant indications that Steinbuch discloses utilizing blade tip speeds lower that the maximum output speed and thus indicates a value of axial induction within the range .25 to 0, as claimed.

In regard to claim 17, following the logic of Steinbuch it would have been obvious to one of ordinary skill in the art to apply the concept of reducing the windward blade tip speed to both adjacent turbines as well as adjacent wind farms.'

In regard to claim 19, the method for a turbine farm would have been apparent from the modified wind farm of Steinbuch.

Allowable Subject Matter

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The adjustment of the axial induction of a first turbine in response to a measure of turbulence at a second turbine essentially on the lee side of the first turbine is not known in the art.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The printed patent application of Avagliano et al. discloses a method and control system for use with a wind farm. The printed patent application of Corten et al. discloses a wind farm arrangement including compensating for the turbulence effects of downstream turbines. The patent issued to Rebsdorf discloses a wind turbine control system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Wiehe whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Wiehe
Examiner
Art Unit 3745

EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

5/14/07